

Appl. No. : 10/688,197
Filed : October 17, 2003

AMENDMENTS TO THE SPECIFICATION

Please amend the following paragraph [0001] as follow:

[0001] This application is a continuation-in-part (CIP), and hereby incorporates by reference the entire disclosure, of co-pending U.S. Patent Application No. 09/750,535, now U.S. Patent No. 6,665,113, entitled "WAVELENGTH CONVERTER AND WAVELENGTH DIVISION MULTIPLEXING TRANSMISSION METHOD USING THE SAME", and filed on December 28, 2000, which claims priority to Japanese Application Nos. 2000-303512 and 11-374813, filed on October 3, 2000 and December 28, 1999, respectively.

Please amend the abstract as follows:

~~A wavelength converter configured to filter out solely lightwaves required to be wavelength converted from the input broadband of wavelength division multiplexed (WDM) lightwaves, which are wavelength converted by use of four wave mixing (FWM). Frequency interval of the input WDM lightwaves is broadened or reduced in comparison of the frequency interval of the WDM lightwaves inputted to the wavelength converted. The frequency interval variation techniques using the wavelength converter, it can be realized to transfer from transmission lines less influenced by inter-channel crosstalk due to FWM to the different transmission lines strongly influenced by inter-channel crosstalk due to FWM, and vice versa. In one embodiment, the invention employs difference frequency generation (DFG) instead of FWM~~
A wavelength converter using difference frequency generation (DFG) is disclosed. In one embodiment, the wavelength converter comprises (a) a first optical filter configured to filter out one or more lightwaves requiring wavelength conversion from wavelength-division multiplexed (WDM) lightwaves, and (b) a broadband multi-channel simultaneous wavelength conversion portion comprising a pump source that generates pump light for use in the process of the DFG, a first optical combiner for combining said pump light with said filtered lightwaves, a high non-linear medium configured to generate wavelength converted lightwaves from said filtered lightwaves using the DFG, and a second optical filter for filtering said wavelength converted from said filtered lightwaves.